

REMARKS

Claims 2, 3, 14, 15, 21-25, 34 and 51-83 are pending. By this Amendment, claims 2, 3, 14, 15 and 34 are amended, claims 51-83 are added, and claims 1, 4-13, 16-20, 26-33 and 35-50 are cancelled. No new matter is added by the above amendments. The claims are amended to even more clearly distinguish over the applied references.

Applicants note with appreciation the allowance of claims 21-25, and the identification of allowable subject matter in claims 2, 3, 14, 15 and 34. Claims 2, 3, 14, 15 and 34 have been rewritten in independent form to incorporate the features of their corresponding independent claim and any intervening claims. Thus, these claims are in condition for allowance.

Claims 1, 4-13, 16-20, 26-33 and 35-50 stand rejected under 35 U.S.C. §103(a) over JP-A-5-288696 (JP -696) in view of U.S. Patent No. 6,504,896 to Miyake et al. This rejection is moot in view of the above amendments to the claims. In addition, Applicants submit that newly-added claims 51-83 are patentable over JP-696 and Miyake et al.

For the convenience of the Examiner, and so that the Examiner can even more fully consider JP-696, an English-language translation of JP-696 is attached hereto.

As recognized in the Office Action, Miyake et al. merely discloses an X-ray illumination optical system for lithography. Miyake et al. does not disclose or suggest generating electrical information based on a photoelectric effect that is caused by irradiating light at an optical member, such as, for example, a reflective member, and does not disclose or suggest using such electrical information in any way. JP-696 discloses monitoring contamination of a mirror 2 with an ammeter 10 that is attached to that mirror.

With respect to independent claims 51 and 56, neither JP-696 nor Miyake et al., alone or in combination, discloses or suggests the claimed signal generator that is electrically connected to at least two optical members and that generates electrical information based on a photoelectric effect which is caused by light being irradiated to the at least two optical

members. The references also do not disclose or suggest the detector of claims 51 and 56 that is electrically connected to the signal generator and that detects an optical characteristic and/or a deterioration of an optical characteristic with respect to at least one of the at least two optical members based on the electrical information generated by the signal generator. JP-696 only detects contamination of a single mirror 2. Thus, JP-696 cannot determine whether any change in the output of the ammeter is due to contamination of the mirror or a change in the synchrotron radiation light 31 that is irradiated to the mirror 2. Accordingly, claims 51 and 56, as well as their dependent claims, are patentable over JP-696 and Miyake et al.

With respect to independent claims 63 and 71, neither JP-696 nor Miyake et al., alone or in combination, discloses or suggests the claimed calculation device that is electrically connected to a signal generator and that calculates an amount of correction of an optical characteristic of a projection system based on the electrical information generated by the signal generator. The references also do not disclose or suggest the claimed adjusting device that is electrically connected to the calculation device and that adjusts the optical characteristic of the projection system based on the calculated amount of correction. JP-696 merely monitors the contamination of a mirror, and does not perform any adjustment. Accordingly, independent claims 63 and 71, as well as their dependent claims, are patentable over the applied references.

Regarding independent claim 77, neither JP-696 nor Miyake et al. discloses or suggests the claimed controller that is electrically connected to a signal generator and that performs a predetermined control based on the electrical information generated by the signal generator. As noted above, JP-696 only monitors the contamination of mirror 2. Accordingly, independent claim 77 and its dependent claims are patentable over the applied references.

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,  
  
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MAC/ccs

Attachments:

English-language Translation of JP-A-5-288696  
Petition for Extension of Time

Date: March 2, 2004

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